HOBO® U-Shuttle
(Part # U-DT-1)

Doc # 9851-A
MAN-U-DT-1
Onset Computer Corporation

Thank you for purchasing a HOBO U-Shuttle. The HOBO U-Shuttle performs the following major functions:

- Reads out data from loggers in the field for transfer to a host computer
- Optionally relaunches the logger — synchronizes the logger's clock with the shuttle's clock and (in most cases) sets logging to begin at the next interval
- Preserves data in nonvolatile memory, even if batteries are depleted
- Displays logger status, including memory, battery level, and sensor readings for some sensors (on some models)
- Displays its own status, including clock, memory, and battery level
- Lets you change the batteries in the field without resetting the clock
- Allows you to test individual smart sensors

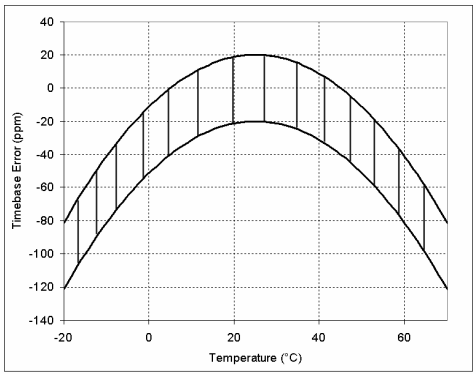
Onset strongly recommends that you spend a few minutes reading this manual and trying out the procedures described here before taking the shuttle into the field.

Inside this package:

- HOBO U-Shuttle
- 30 cm (12") serial logger cable (CABLE-HOBO-SHTL)
- USB interface cable (CABLE-USBMB)

Specifications

Requirements	HOBOware 2.2.0 or greater; USB cable (provided); compatible logger with appropriate cable and/or base station
Compatibility	All U-Series loggers, HOBO Weather Stations and Micro Stations (H21), and HOBO FlexSmart loggers (H22); not compatible with the HOBO Waterproof Shuttle (U-DTW-1)
Firmware upgrades	Available on the Onset website as needed to provide compatibility with future supported logger models
Operating temperature	0° to 50°C (32° to 122°F)
Storage temperature	-10° to 50°C (14° to 122°F)
Time accuracy	± 1 minute per month at 25°C (77°F); see Plot A
Logger-to-shuttle transfer speed	USB/optic: 64K in approximately 30 seconds Serial: 512K in approximately 60 seconds
Shuttle-to-host transfer speed	Full shuttle offload (4 MB) to host computer in 3 to 5 minutes, depending on computer
Data capacity (full loggers)	4 MB (minus 64 KB for shuttle information): enough for 504 readouts of 8K loggers, 63 readouts of 64K loggers, or 7 readouts of 512K loggers
Idle timeout	Shuttle powers down after two minutes of idle time, except when actively communicating with HOBOware (see *HOBOware User's Guide* for details) or changing logger batteries (10 minutes)
Ports	RJ-12 jack for communicating with smart sensors; mini-B full speed USB port for communicating with host computer; full speed USB port for communicating with U-Series loggers and base stations; high speed serial port for communicating with serial loggers. Shuttle communicates with only one device at a time.
Batteries	Main: 2 AA alkaline batteries Clock backup: 1 CR1225 lithium battery (3 V)
Battery life	Main: One year or approximately 50 complete memory fills, typical use Clock backup: 10 years typical use (with main batteries installed)
Weight	153 g (5.4 oz)
Dimensions	11.0 x 6.9 x 2.7 cm (4.35 x 2.70 x 1.05 inches)
Case materials	ABS case with urethane rubber grips, polycarbonate label
CE	The CE Marking identifies this product as complying with the relevant directives in the European Union (EU).



Plot A

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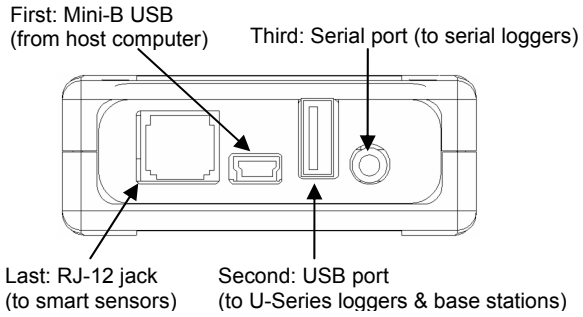
Ports on the HOBO U-Shuttle

The shuttle communicates with only one device at a time. It can detect the host computer automatically. When actively searching for devices, it first looks for a host computer, then for a U-Series logger, then for a serial logger, and last for a smart sensor.



Important: *Never use these ports to attach the shuttle to devices that are not supported by the U-Shuttle. Doing so may void the warranty, drain the shuttle's batteries prematurely, and damage the electronics.*

Control buttons

The U-Shuttle has three dual-function buttons, labeled **esc (on/off)**, **yes (next)**, and **no (alt)**.

When the shuttle asks a question, press the **yes** or **no** button to answer the question.

If the shuttle displays something other than a question, press the **next** button to advance to the next screen, or the **alt** button to view an alternative screen (if available).

Press the **esc (on/off)** button to return to the main menu (**Find Device/Shuttle Info**). Press the **esc (on/off)** button again to power the shuttle off.

Before using the shuttle for the first time

Before using the shuttle for the first time, you must launch it and any compatible U-Series loggers with HOBOware 2.2 or greater.

1. Make sure the host computer's clock and time zone are correct. If they are not, correct them before starting HOBOware. This information will be loaded into the shuttle, and will be the basis for all logger relaunches in the field.
2. Use HOBOware 2.2 or greater to launch each U-Series logger you wish to use with the shuttle. U-Series loggers that were last launched with an earlier version of HOBOware will not be compatible with the U-Shuttle until you relaunch them with HOBOware 2.2 or greater.
3. Plug the large end of the USB interface cable into a USB port on the computer.
4. Plug the small end of the USB interface cable into the small USB port in the shuttle.
5. Press the **on/off** button to power on the shuttle. (It may take a few seconds for the new hardware to be detected.) The shuttle display should read "PC/Host Connected."
6. Follow the instructions in the *HOBOware User's Guide* to access the **Manage Shuttle** dialog.
7. Launch the shuttle as described in the *HOBOware User's Guide*. Launching synchronizes the shuttle's clock to the host computer, deletes all data from the shuttle's memory, and initializes the shuttle's control information.
8. Disconnect the USB cable from the shuttle and press the **on/off** button to turn the shuttle off.

Preparing to go on location

Before you go into the field to read out and relaunch loggers with the shuttle, take the following steps:

1. Make sure the host computer's clock and time zone are correct. If they are not, correct them before starting HOBOware.
2. Press the **on/off** button to turn the shuttle on, and connect it to a host computer running HOBOware. The shuttle display should read "PC/Host Connected."
3. Follow the instructions in the *HOBOware User's Guide* to access the **Manage Shuttle** dialog. Make sure the battery level is good (the battery gauges should be green), and change the batteries after you complete this procedure if they are weak.
4. Synchronize the shuttle's clock to the host computer. If there are datafiles on the shuttle, offload them and relaunch the shuttle to make sure there is enough memory to accommodate the loggers you plan to read out. (Launching the shuttle synchronizes the clock and deletes all the datafiles in one step.)
5. Disconnect the USB cable from the shuttle and press the **on/off** button to turn the shuttle off.
6. Be sure to bring the necessary cables, base stations, and couplers to communicate with your loggers.

Using the U-Shuttle in the field

After you have ensured that the there is sufficient memory available and the shuttle's clock is synchronized, you are ready to take the U-Shuttle into the field.

The shuttle allows you to check the logger's status and read it out while the logger is still logging. You can then stop the logger and change its batteries, if necessary, and relaunch the logger. Not all of these steps are required (i.e. you do not have to change the batteries every time), but the shuttle will give you an opportunity to perform each step before it proceeds to the next.

In most cases, you should be able to easily read out and relaunch a logger simply by following the prompts on the shuttle's display. The following steps provide more detailed information.

Checking the logger's status

1. If the shuttle is still connected to the host computer, disconnect it.
2. Use the shuttle's large USB port or serial port to attach the correct cable or base station for the logger, then connect the logger.
3. Turn the shuttle on by pressing the **on/off** button.
4. From the shuttle's main menu (**Find Device/Shuttle Info**), press **yes**.
5. When the shuttle detects a supported logger, it displays the logger's status, including whether it is stopped, logging, or waiting for a triggered/delayed start; the amount of logger memory that has been used for the datafile (**DF: XX%**); and battery level (**Bat: XX%**). Press **next** to continue.
6. For all serial loggers and some U-Series loggers with certain sensors, the shuttle displays the number of sensors and asks whether you want to see the sensor details. Press **no** to skip this step, or **yes** to view the sensor details.

   Important: *If a serial logger is communicating with a U-Shuttle for the first time, the shuttle may display a message "WS needs upgrade to show sensors" (press* ***next****); "Readout&Relaunch installs upgrade" instead of displaying the sensors. When you relaunch the logger, the U-Shuttle will upgrade the logger's firmware so that sensors can be displayed the next time you check the logger's status with the shuttle.*

   The display cycles through the list of sensors, identifying each sensor and giving its reading. Sensor readings are shown in the units that were preferred in HOBOware when the logger was launched. Press **next** to continue to the next sensor, or press **esc** to end communication with the logger.

   After the shuttle has displayed all sensors, it will ask if you want to repeat the readings. Press **yes** to repeat them, or **no** to end this step.

Reading out the logger

7. The shuttle asks if you want to read out the logger. Press **yes** to read out the logger, or **no** to skip ahead to step 9. (If the logger contains data that has not been read out, the shuttle will not allow you to proceed beyond this step until the logger has been read out.)
8. While the shuttle reads out the logger, the shuttle display will read "Offloading..." to let you know that the readout is in progress.

   Important: *If you read out a logger that is still waiting for a delayed or triggered (button or coupler) start, the resulting datafile will not open in HOBOware (because it has no data).*

Stopping the logger

9. When the readout is finished, the shuttle asks if you want to restart the logger, and if you are sure. (The shuttle will not offer to relaunch a logger that contains data that has not been read out.)

   - To let the logger continue logging without relaunching, press **no**. This will end the shuttle's communication with the logger. Disconnect the logger from the shuttle.
   - To **stop** the logger without relaunching, press **yes** to answer the question and the "are you sure" prompt. The shuttle stops the logger, displays the logger's battery status, and asks if you want to change the battery. *Disconnect the logger from the shuttle.* This will end the shuttle's communication with the logger.

     For U-Series loggers only, the shuttle displays the message "HOBO Is Stopped" when you disconnect the logger at this point. Press **next** to return to the main menu (**Find Device/Shuttle Info**), or **on/off** to turn the shuttle off.
   - To **relaunch** the logger, press **yes** to answer the question and the "are you sure" prompt. The shuttle stops the logger (if it is still logging), displays the logger's battery status, and asks if you want to change the battery. Continue to the next step.

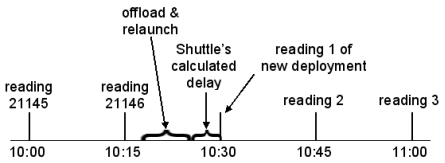
Replacing logger batteries in the field

10. To change the logger's batteries, answer **yes** to the "Change Battery?" prompt and continue to the next step. Otherwise, press **no** and skip to step 15 (relaunch).
11. At the "Change Battery Now" prompt, disconnect the logger from the shuttle.
12. Change the logger's batteries, then reconnect the logger to the shuttle. (The shuttle will power itself off if you do not complete the battery change within ten minutes.) ***Important:*** *Make sure you reconnect the same logger!*
13. Press **yes**. The shuttle displays the power level of the new batteries and again asks if you want to change the batteries.
14. To continue with the relaunch sequence, answer **no** to the prompt to change the batteries.

Relaunching the logger

15. For serial loggers communicating with a U-Shuttle for the first time, the shuttle may display a message "Upgrading WS." The U-Shuttle is upgrading the logger's firmware so that sensor readings can be displayed.
16. For serial loggers only, the shuttle asks if you would like to see the sensors again. Press **yes** to cycle through the list of sensors as described earlier, or **no** to skip this step.
17. The shuttle relaunches the logger. It synchronizes the logger's clock to the shuttle's internal clock and relaunches the logger, using the description, channels to log, logging interval, and other settings that are already in the logger. (Loggers that were launched with multiple logging intervals will be relaunched with the last defined interval.) The logger is launched with a delay that causes its readings to be

synchronized with those of the previous deployment, as shown in the following diagram.



If the logger is still waiting for a delayed start when you relaunch it, the logger begins logging at the next interval that matches the intended deployment. For example, if a logger is scheduled to begin logging at 6:00 with a 15-minute interval, and you relaunch it at 4:16, the logger will begin logging at 4:30.

Important: *If the logger was launched with multiple logging intervals or a triggered (coupler/button) start, there is no synchronizing delay.*

18. When the relaunch has completed, the shuttle displays a "HOBO Launched" confirmation message. If you do not see this message, use the shuttle to check the logger's status.
19. Disconnect the logger from the shuttle. Leaving a logger plugged in will drain the shuttle's batteries, even when the shuttle is not powered on.

Using the shuttle to check smart sensors

In addition to reading out and checking the status of loggers, the U-Shuttle can communicate directly with smart sensors via its RJ-12 jack. Use this feature to get spot readings, confirm sensor operations, identify unlabeled sensors that are tied in a bundle, or troubleshoot sensor malfunctions.

To check the status of a smart sensor:

1. Plug the sensor into the shuttle.
2. From the shuttle's main menu (**Find Device/Shuttle Info**), press **yes**.
3. The shuttle asks you to confirm the units type (US or metric, based on the preferred units in HOBOware when you launched the shuttle). Press **yes** to use the current selection, or **no** to switch units.
4. The shuttle displays the sensor description and reading. Press **next** to continue.
5. The shuttle displays the sensor's approximate dormant current drain. If it is higher than 0.05 mA, the sensor may be defective. Press **next** to continue.
6. The shuttle begins the sequence for the next attached sensor; if no other sensor is attached, it offers to repeat from the beginning. Press **next** to continue, or **esc** to exit the sensor program.
7. Remove the sensor when you are finished checking it. Leaving a sensor plugged in can drain the shuttle's batteries, even when the shuttle is not powered on.

Checking shuttle status in the field

The shuttle can report its own status.

1. From the shuttle's main menu (**Find Device/Shuttle Info**), press **no** for Shuttle Info.
2. The shuttle displays the time and date. To toggle between local time (the time zone of the computer that launched the shuttle) and UTC (Coordinated Universal Time), press **alt**. Press **next** to continue.
3. The shuttle displays the amount of memory used and the number of datafiles in its memory. Press **next** to continue.
4. The shuttle displays the main batteries' and clock backup battery's levels. Press **next** to continue.
5. The shuttle displays its firmware version number and asks if you want to repeat the shuttle status information. Press **yes** to repeat, or **no** to return to the main menu (**Find Device/Shuttle Info**).

Offloading data to the host computer

To offload the data stored in the shuttle, take the following steps:

1. Press the **on/off** button to turn the shuttle on, and connect it to a host computer running HOBOware. The shuttle display should read "PC/Host Connected."
2. Follow the instructions in the *HOBOware User's Guide* to access the **Manage Shuttle** dialog. The **Manage Shuttle** dialog shows you how many datafiles are available for offload.
3. Offload and save the datafiles. Refer to the *HOBOware User's Guide* for details on saving datafiles offloaded from the shuttle.
4. Make sure the battery levels are good, and change the batteries now if they are weak. Synchronize the shuttle's clock, if necessary, or relaunch to delete the datafiles from the shuttle.
5. When finished, disconnect the USB cable from the shuttle and press the **on/off** button to turn the shuttle off.

Shuttle clock and time zone offsets

When you use HOBOware to launch a shuttle or logger, the host computer's time and time zone offset from UTC are used to set the device's clock. (UTC, or Coordinated Universal Time, is similar to Greenwich Mean Time.) The time zone offset makes it possible to determine objective, non-local time. This prevents conflicts and confusion when you relaunch a logger with a shuttle that may have been launched in a different time zone, or before a Spring or Fall time change.

For example, if the shuttle reports a time of 2:00 at UTC -8 (Pacific Standard Time) and a logger reports a time of 5:00 at UTC -5 (Eastern Standard Time), both devices are correct — both are reporting 10:00 UTC. If you launch and deploy a logger in Massachusetts, but relaunch it with a shuttle that was

launched in Oregon, the shuttle will still synchronize the logger's clock to the correct time, without interfering with the logger's original time zone offset.

Because the logger's time zone offset is not changed by a shuttle relaunch, the time zone offset in the datafile may be off by one hour if you use the shuttle to relaunch a logger after a Spring or Fall time change. You can manually adjust the time zone offset in the **Plot Setup** dialog when you open the datafile in HOBOware. The time stamps will be correct.

Keep the clock running

Normally, the shuttle's clock is powered by the main (AA alkaline) batteries. The clock backup (CR1225 lithium) battery temporarily powers the shuttle's clock when the main batteries are removed or dead. This enables you to change the main batteries in the field without stopping the shuttle's clock.

If both the main batteries and the clock backup battery die or are removed, the shuttle's clock will stop. If the clock stops, the shuttle will not communicate with loggers until you have powered it with fresh batteries and relaunched it with HOBOware. Relaunching synchronizes the shuttle's clock and deletes all of the datafiles from the shuttle's memory. (Remember to offload the datafiles on the host computer before relaunching the shuttle.)

Shuttle batteries

To avoid battery problems, always check the shuttle's batteries in HOBOware before going into the field, and make sure you have another pair of fresh AA alkaline batteries with you when the batteries start to run low.

When you are not using the shuttle, disconnect it from the computer and detach any loggers and sensors. Leaving these items attached will put additional strain on the batteries.

Leave the main batteries in the shuttle, even when it will not be used for some time. As long as the batteries have some power (even if they are running low), they can power the clock. The clock backup battery is not intended to power the clock alone (without the main batteries installed) for long periods of time.

If you will be storing the shuttle for many months and do not want to leave the batteries in it, first offload the datafiles, then remove ALL the batteries (including the clock backup battery). When you are ready to use the shuttle again, reinstall all of the batteries and launch the shuttle to synchronize the clock.

Important: *Once the main batteries are dead, you should remove them as soon as possible to ensure that they do not leak and damage the shuttle. Replace them soon to protect the clock backup battery.*

Replacing the shuttle's main batteries

If the shuttle's main batteries run low (2.4 to 2.2 V), the shuttle will display a warning ("Low Shut Battery") when you power it up, but you will still be able to use the shuttle for a limited amount of time. If the batteries become too weak (less than 2.2 V) to power the shuttle, the shuttle will display another warning ("Main Bat Too Low") advising that the batteries must be replaced before you can use it again.

Any logger data that is already in the shuttle will remain safe, and the clock backup battery will continue to keep time. However, the shuttle will not communicate until its main batteries are replaced, and the clock backup battery may drain prematurely.

The shuttle's main batteries are easy to change, even in the field. To change the shuttle's main batteries:

1. Turn off the shuttle and remove any cables or sensors.
2. On the back of the case, slide the battery compartment lid free.
3. Remove the old batteries and install two new AA alkaline batteries in the correct orientation, as shown in the battery compartment.

   Important: *Do not use lithium batteries to power the shuttle. The shuttle cannot measure the voltage of AA lithium batteries, and will not be able to report its battery level accurately.*
4. Turn the shuttle over and look at the display. The shuttle should power up automatically and display a "Main Power Reset" message, and ask if you want it to look for a device. If it does not, press the **on/off** button. If the shuttle still does not power up, try a new pair of batteries.
5. Slide the lid onto the battery compartment until it snaps into place.

Replacing the shuttle clock backup battery

The clock backup battery keeps the shuttle's clock running while you change the main batteries in the field. It cannot support the U-Shuttle's other functions, and it is not intended to power the shuttle's clock without the main batteries for extended periods.

If the shuttle's clock backup battery runs low (2.66 V), the shuttle will display a warning ("Low Shut Clk Bat") when you power it up. You should replace the battery as soon as you can. This will enable you to change the main batteries in the field whenever you need to, without stopping the shuttle's clock. The clock battery is "dead" at approximately 2.5 V.

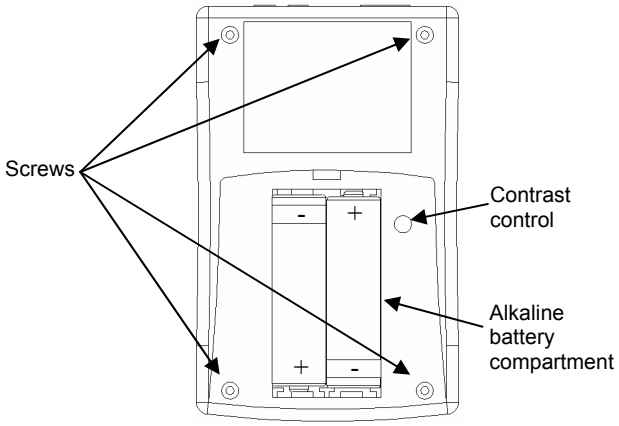
Important: *If the shuttle's clock stops (main and clock backup batteries die or are removed), you must: 1) power the shuttle with fresh batteries, 2) offload any unsaved datafiles from the shuttle, and 3) relaunch the shuttle with HOBOware, which synchronizes the shuttle's clock and deletes all of the datafiles from the shuttle's memory.*

Although it is possible to change the clock backup battery in the field, this is not recommended. If you inadvertently disconnect the wires that attach the main batteries to the circuit board, the shuttle's clock will stop. You could also drop and lose the screws, or get the circuit board wet.

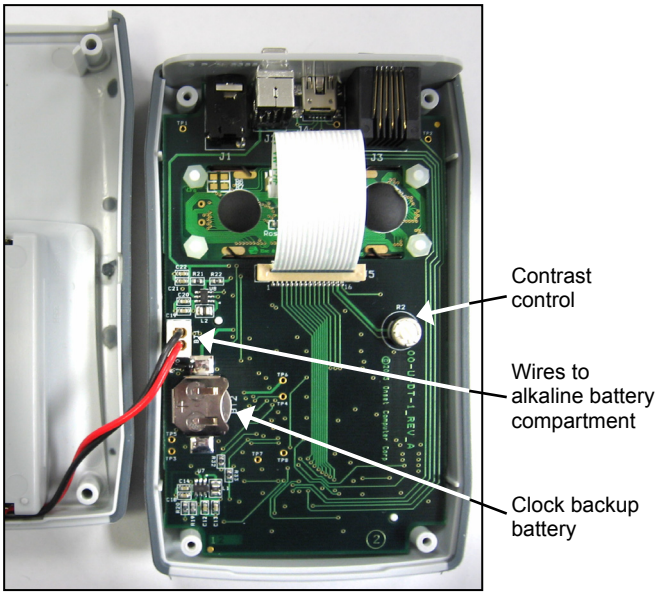
To change the clock backup battery:

1. Turn off the shuttle and remove any cables or sensors.
2. On the back of the shuttle case, slide the battery compartment lid free. Do not remove the AA batteries.

3. Remove the screws in the upper corners of the back of the case, and the lower corners in the main battery compartment. Set them aside.



4. Carefully pull the case apart. The circuit board may stay in the front half of the case, but it is attached to the main battery compartment by a pair of wires. If you leave these wires plugged in, the main batteries (if they are in good condition) will power the clock while you change the clock backup battery, so that you do not have to relaunch the shuttle when you are finished.



Important: *The shuttle can be damaged by electrostatic discharge. Take precautions when handling the circuit board.*

5. Lift out the circuit board and carefully push out the old battery with a small blunt, nonmetallic instrument. Install a new 3V CR1225 lithium battery, positive side facing up.
6. Turn the circuit board over and press the leftmost (**on/off**) button under the display. The shuttle should power up normally and ask if you want it to look for a device. Press the **on/off** button again to turn the shuttle off.
7. Put the board back into the case. Close the case and re-fasten the screws.
8. Slide the lid onto the battery compartment until it snaps into place.
9. Check the shuttle's clock in HOBOware. If the clock stopped or is off by an hour or more, offload the datafiles from the shuttle and relaunch it to synchronize the clock. The shuttle will not read out and relaunch loggers if the shuttle needs to be relaunched.

WARNING: Do not install batteries backwards, recharge, put in fire, expose to extreme heat, or mix with other battery types, as the batteries may explode or leak. Contents of an open or leaking battery can cause chemical burn injuries. **Replace all used batteries at the same time.** Recycle or dispose of batteries according to applicable federal, state, and local regulations.

Other maintenance

Adjusting the LCD contrast

The shuttle's LCD contrast is factory-set for optimal viewing under most conditions. The contrast control is located inside the shuttle's case. To adjust it without opening the case, open the battery compartment and insert a small flathead screwdriver through the hole to the right of the batteries. Use the screwdriver to **carefully** turn the contrast control.

In very hot or cold conditions (outside the recommended operating range of 0°C/32°F to 50°C/122°F), the LCD screen may become inoperable, regardless of the contrast setting.

System reset

It may be necessary to reset the shuttle because of a crash or unexpected communications failure. Resetting the shuttle does not reset the clock or cause data to be lost. To reset the U-Shuttle, turn the shuttle on, then briefly press all three buttons simultaneously. Do not reset the shuttle while it is communicating with (or attached to) a logger, sensor, or the host computer.

Troubleshooting

If you encounter an error, refer to the list below for an explanation.

Bad HOBO Battery

The shuttle cannot communicate with the U-Series logger, because the logger's battery is dead.

Comm Failure
or
Contact Lost
Button to Reset

The PC or logger was disconnected from the shuttle (or the logger slipped out of its base station/coupler) while the shuttle was communicating with it. To recover from this error, the shuttle may need to reset itself. Press any button.

HOBO Is Stopped

The U-Series logger was disconnected from the shuttle before it could be relaunched. If you intended to remove the logger without relaunching, no further action is necessary.

Low Shut Battery

The shuttle's main (AA alkaline) batteries are running low. The shuttle will still function, but you should replace these batteries soon.

Low Shut Clk Bat

The shuttle's clock backup battery (CR1225) is running low. The shuttle will still function as long as the main batteries have power, but if the clock backup battery runs down further, the shuttle's clock may stop the next time you change the main batteries.

Main Bat Too Low

The shuttle's main (AA alkaline) batteries are too weak to communicate reliably. You must replace the batteries before you can continue working with the shuttle.

No Shuttle Info

The connected U-Series logger is compatible with the shuttle, but cannot communicate with the shuttle until it has been launched with HOBOware 2.2 or greater.

Not Enough Room

The shuttle's memory is too full to accommodate the data from this logger. Use HOBOware to offload the shuttle, then relaunch the shuttle to delete the datafiles.

Optic Base Found

The shuttle detects a base station, but not a logger. The logger or coupler may not be aligned or seated properly, or the logger may have failed.

Shuttle Requires PC/Host Relaunch

The shuttle's clock stopped because both the main batteries and the clock backup battery were too low to keep it running. The shuttle cannot be used again in the field until you relaunch it. Ensure that the bad batteries have been replaced, then use HOBOware to offload the data and relaunch the shuttle.

Unsupported HOBO

The connected device is an Onset logger, but the model is not supported by the U-Shuttle. If this is a new logger model, the U-Shuttle may simply need a firmware update. Refer to the Onset website for details:
http://www.onsetcomp.com/Support/support.html

Bad HOBO Err XXX

The shuttle cannot process the logger's data. Try to read out the logger directly with HOBOware, then relaunch the logger. If HOBOware cannot read out the logger, refer to the *HOBOware User's Guide* for information about corrupted logger headers. If the error persists after you have relaunched the logger, make a note of the error number and contact Onset for support.

System Error XXX

If you receive a System Error, turn off the shuttle and disconnect any devices. Then reconnect a device, check all connections, and power the shuttle on again. If the error persists, make a note of the error number and contact Onset for support.

Service and Support

As part of Onset's ongoing efforts to provide 100% customer satisfaction, our Continuing Engineering Group constantly monitors and evaluates all of our products and software. In the unlikely event any significant defect is found, Onset will notify you. If you find a defect, please e-mail us at loggerhelp@onsetcomp.com.

HOBO products are easy to use and reliable. In the unlikely event that you have a problem with this instrument, contact the company where you bought the logger: Onset or an Onset Authorized Dealer. Before calling, you can evaluate and often solve the problem if you write down the events that led to the problem (are you doing anything differently?) and if you visit the Technical Support section of the Onset web site at www.onsetcomp.com/support.html. When contacting Onset, ask for technical support and be prepared to provide the product number and serial number for the logger and software version in question. Also completely describe the problem or question. The more information you provide, the faster and more accurately we will be able to respond.

Onset Computer Corporation
470 MacArthur Blvd., Bourne, MA 02532
Mailing: PO Box 3450, Pocasset, MA 02559-3450
Phone: 1-800-LOGGERS (1-800-564-4377) or 508-759-9500
Fax: 508-759-9100
E-mail: loggerhelp@onsetcomp.com
Internet: www.onsetcomp.com

Warranty

Onset Computer Corporation (Onset) warrants to the original end-user purchaser for a period of **one year** from the date of original purchase that the HOBO® product(s) purchased will be free from defect in material and workmanship. During the warranty period Onset will, at its option, either repair or replace products that prove to be defective in material or workmanship. This warranty shall terminate and be of no further effect at the time the product is (1) damaged by extraneous cause such as fire, water, lightning, etc. or not maintained in accordance with the accompanying documentation; (2) modified; (3) improperly installed; (4) repaired by someone other than Onset; or (5) used in a manner or purpose for which the product was not intended.

THERE ARE NO WARRANTIES BEYOND THE EXPRESSED WARRANTY ABOVE. IN NO EVENT SHALL ONSET BE LIABLE FOR LOSS OF PROFITS OR INDIRECT, CONSEQUENTIAL, INCIDENTAL, SPECIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS CONTRACT OR OBLIGATIONS UNDER THIS CONTRACT, INCLUDING BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER LEGAL THEORY.

Limitation of Liability. The Purchaser's sole remedy and the limit of Onset's liability for any loss whatsoever shall not exceed the Purchaser's price of the product(s). The determination of suitability of products to the specific needs of the Purchaser is solely the Purchaser's responsibility. **THERE ARE NO WARRANTIES BEYOND THE EXPRESSED WARRANTY OFFERED WITH THIS PRODUCT. EXCEPT AS SPECIFICALLY PROVIDED IN THIS DOCUMENT, THERE ARE NO OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTIBILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO INFORMATION OR ADVICE GIVEN BY ONSET, ITS AGENTS OR EMPLOYEES SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THE EXPRESSED WARRANTY OFFERED WITH THIS PRODUCT.**

Indemnification. Products supplied by Onset are not designed, intended, or authorized for use as components intended for surgical implant or ingestion into the body or other applications involving life-support, or for any application in which the failure of the Onset-supplied product could create or contribute to a situation where personal injury or death may occur. Products supplied by Onset are not designed, intended, or authorized for use in or with any nuclear installation or activity. Products supplied by Onset are not designed, intended, or authorized for use in any aeronautical or related application. Should any Onset-supplied product or equipment be used in any application involving surgical implant or ingestion, life-support, or where failure of the product could lead to personal injury or death, or should any Onset-supplied product or equipment be used in or with any nuclear installation or activity, or in or with any aeronautical or related application or activity, Purchaser will indemnify Onset and hold Onset harmless from any liability or damage whatsoever arising out of the use of the product and/or equipment in such manner.

Returns

Please direct all warranty claims and repair requests to place of purchase.

Before returning a failed unit directly to Onset, you must obtain a Return Merchandise Authorization (RMA) number from Onset. You must provide proof that you purchased the Onset product(s) directly from Onset (purchase order number or Onset invoice number). Onset will issue an RMA number that is valid for 30 days. You must ship the product(s), properly packaged against further damage, to Onset (at your expense) with the RMA number marked clearly on the outside of the package. Onset is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company. Loggers must be clean before they are sent back to Onset or they may be returned to you.

Repair Policy

Products that are returned after the warranty period or are damaged by the customer as specified in the warranty provisions can be returned to Onset with a valid RMA number for evaluation.

ASAP Repair Policy. For an additional charge, Onset will expedite the repair of a returned product.

Data-back™ Service. HOBO data loggers store data in nonvolatile EEPROM memory. Onset will, if possible, recover your data.

Tune Up Service. Onset will examine and retest any HOBO data logger.

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